

P-7.5 Summarize image formation in microscopes and telescopes (including reflecting and refracting).

Revised Taxonomy Level 2.4 Summarize conceptual knowledge

In physical science (PS-7.6) students

- ❖ Summarize refraction of light waves
 - Understand that lenses may be converging or diverging
 - Draw ray diagrams which illustrate the path of light through both converging and diverging lenses
 - Define real and virtual images

In physics, (P-5.5) students

- ❖ Use Snell's law and ray diagrams to illustrate the path of light and to find the location and size of the image.
 - as it passes through convex and concave of lenses
 - from a variety of distances in reference to the device and its focal length

It is essential for all students to

- ❖ Understand how optical devices depend upon the laws of reflection and refraction
 - The function of the lens and the eye piece and why both are necessary in telescopes
 - Lens, prism, and mirror function and arrangement in
 - Astronomical telescopes
 - Terrestrial telescopes
 - Binoculars
 - Compound microscopes

Assessment

The revised taxonomy verb summarize means “to abstract a general theme or major point” For this indicator, the major focus of assessment should be to insure that students have a deep conceptual understanding of the law of reflection and refraction and how they vital in the functioning of familiar optical devices. Conceptual knowledge requires that students understand the interrelationships among the basic elements within a larger structure that enable them to function together. In this case, that students understand laws of reflection and refraction and how the factors that influence reflection and refraction affect common devices and their functioning.